

LISTING OF CLAIMS

The following listing of claims replaces all prior versions:

1-50 Canceled

51. (Currently amended) A method of detecting a target nucleic acid sequence in a sample by fluorescence, comprising:

contacting the sample with an oligonucleotide specific for hybridizing to the target sequence labeled with a fluorophore and a quencher, wherein the quencher is an α -aminoanthraquinone, and wherein fluorescence of the fluorophore is reduced by fluorescence resonance energy transfer to the quencher or by ground state quenching by the quencher when the oligonucleotide is not hybridized to the target nucleic acid sequence; and

detecting the presence of the target nucleic acid sequence in the sample by an increase in fluorescence from reduction of fluorescence resonance energy transfer to the quencher or from reduction of ground state quenching by the quencher upon hybridization of the oligonucleotide to the target nucleic acid sequence, or upon hybridization of the oligonucleotide to the target sequence and subsequent cleavage of the oligonucleotide indicating the presence of the target nucleic acid sequence in the sample.

52. (Previously presented) The method of claim 51, wherein the quencher is an α -alkylaminoanthraquinone or an α -arylaminanthraquinone.

53. (Currently amended) The method of claim 51, wherein the α -aminoanthraquinone quencher is [[a]] non-fluorescent quencher.

54. (Previously presented) The method of claim 51, wherein the quencher is a di- α -aminoanthraquinone.

55. (Previously presented) The method of claim 54, wherein the quencher is a di- α -alkylaminoanthraquinone, a di- α -arylaminanthraquinone or an α -alkylamino- α -arylaminanthraquinone.

56. (Previously presented) The method of claim 51, wherein fluorescence is reduced by fluorescence resonance energy transfer when the oligonucleotide is not hybridized to the target nucleic acid sequence.

57. (Previously presented) The method of claim 51, wherein fluorescence is reduced by ground state quenching when the oligonucleotide is not hybridized to the target nucleic acid sequence.

58. (Previously presented) The method of claim 51, wherein fluorescence is reduced by both fluorescence resonance energy transfer and ground state quenching when the oligonucleotide is not hybridized to the target nucleic acid sequence.

59-60. (Canceled)

61. (Previously presented) The method of claim 51, wherein the increase in fluorescence arises from cleavage of the labeled oligonucleotide.